



AVOX Systems TM

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WORKMANSHIP STANDARDS GUIDELINE


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PROPRIETARY

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Record of Revisions

REV	DATE	EFFECT ON		REASON FOR REVISION	Initial
		PAGE	PARAGRAPH		
-	2/11/2010	All	-	Initial Release	EJG
A	4/13/2010	20 - 34	10	Added textiles	KW
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Contents

Record of Revisions	2
1 GENERAL	4
1.1 Scope	4
1.2 Purpose	4
1.3 Standards and Specifications	4
2 REFERENCE DOCUMENTS	4
2.1 AVOX Documents	4
2.2 Document Hierarchy.....	5
2.3 General documents	5
3 Workmanship	5
3.1 Machined Parts	5
3.2 Burr / Edge Requirements	11
4 ENGINEERING	11
5 INSPECTION	11
5.1 Inspection Classes	11
5.2 Surface Texture.....	13
5.3 Threads	13
5.4 Drilled Holes.....	14
6 CYLINDERS	15
6.1 Steel Cylinders.....	15
6.2 Composite Cylinders.....	16
7 RUBBER and PLASTIC MOLDED COMPONENTS	16
7.1 Rubber Parts	16
7.2 O-Rings	18
7.3 Plastic Molded Components	18
8 External Drawing Specifications/Standards	19
9 Cleanliness and Packaging	20
10 Textiles	20

1 GENERAL

1.1 Scope

This specification establishes a workmanship standard to bring clarity to characteristics that are normally evaluated subjectively, i.e. (burrs, surface finish, plating, cleanliness, etc) and to standardize AVOX's approach to Product Quality. Ref. QAF76/S_0002W QA.

1.2 Purpose

This purpose of this document is to provide clear guidelines about when to apply this standard, rules about how to specify the standard, and clarification of the terminology.

The intent of this specification is to establish accept/reject criteria for all items supplied to AVOX and/or manufactured by AVOX for use in AVOX-ZODIAC AEROSPACE applications based on the design requirements and drawing specifications.

1.3 Standards and Specifications

1.3.1 Design Specifications

Design requirements are expected to describe the complete requirements of the part or assembly, both functionally and aesthetically. The drawing visually or textually must describe the final requirements

1.3.2 Inspection Specifications and Practices

Inspections standards must define explicitly how the part or assembly is inspected for presence (or absence) of burrs, edge finish, and overall quality. Inspection standards or specifications ensure that both the intent of the drawing and company policy are achieved.

2 REFERENCE DOCUMENTS

2.1 AVOX Documents

2.1.1 Component and Assembly Drawings

2.1.2 Acceptance Test Procedures (ATP)

2.1.3 Purchase Order

2.1.4 Manufacturing Operations Sheets

2.1.5 AVOX SMP 7600001 Standard Manufacturing Process Rubber Molding

2.2 Document Hierarchy

This document supplements the engineering drawings and purchase order requirements. In the event of conflict, purchase order requirements and engineering drawings shall take precedence.

2.3 General documents

- 2.3.1 ASME Y14.100 Engineering Drawing Practices (2004).
- 2.3.2 ASME Y14.5M Dimensioning and Tolerancing (1994, R 2004).
- 2.3.3 ASME Y14.36M Surface Texture Symbols (1996, R 2002).
- 2.3.4 ASME B46.1 - 2002 Surface Texture, Surface Roughness, Waviness and Lay.
- 2.3.5 AS71051B Pipe Threads, Taper, Aeronautical National Form, Symbol ANPT – Design and Inspection Standard.
- 2.3.6 AS568C Aerospace Size Standard for O-rings.
- 2.3.7 CGA C-6-2005, Standards for Visual Inspection of Steel Compressed Gas Cylinders, Compressed Gas Association.
- 2.3.8 CGA C-6.2, Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders, Compressed Gas Association.
- 2.3.9 MIL-STD-413C Visual Inspection Guide for Rubber Elastomeric O-Rings.
- 2.3.10 Rubber Manufacturers Association (RMA) Rubber Handbook RMA MO-1 (2005).
- 2.3.11 The Plastics Industry Trade Association SPI/SPE AR-106 Mold Finish Guide.

3 Workmanship

3.1 Machined Parts

3.1.1 Burr and Edge Terminology

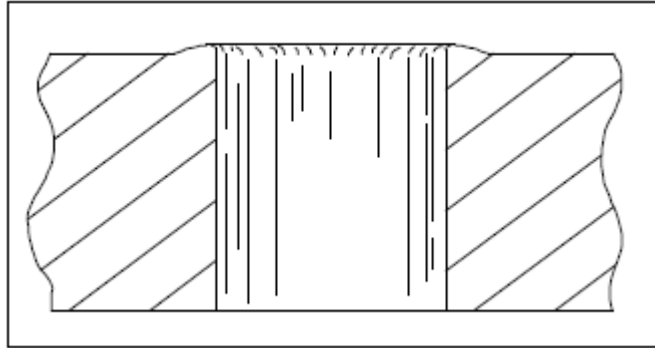
3.1.1.1 *Burr – a non-functional piece of material extending from the parent surface of a part. A burr can be a sharp, ragged projection, firmly adhered, or a loosely hanging projection.*

3.1.1.2 *Burr Related Terms and Types –*

3.1.1.2.1 ***Extruded Burr** - readily seen raised material generally caused by the drilling of a malleable material . This type of burr does*

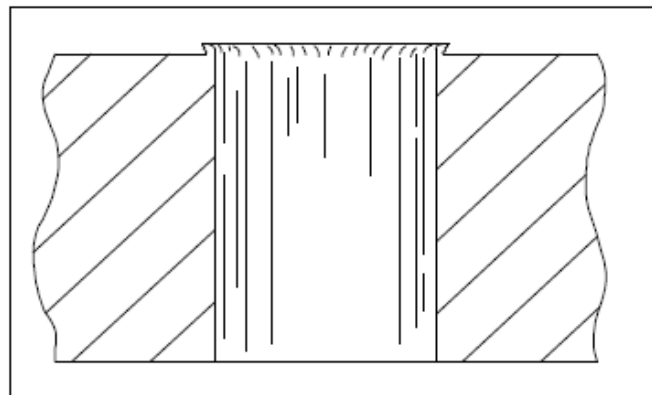
NOT exhibit evidence of material that can break away. See Figure 1 for pictorial example.

Figure 1



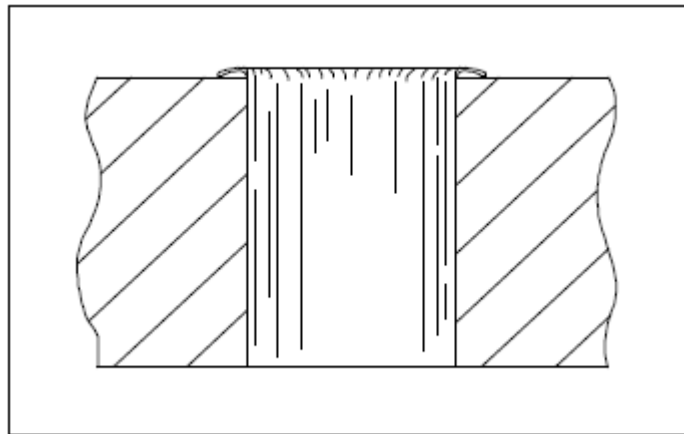
3.1.1.2.2 Feathered Burr- loose burr generally found on an edge where two dissimilar surface finishes meet. See Figure 2 for pictorial example.

Figure 2



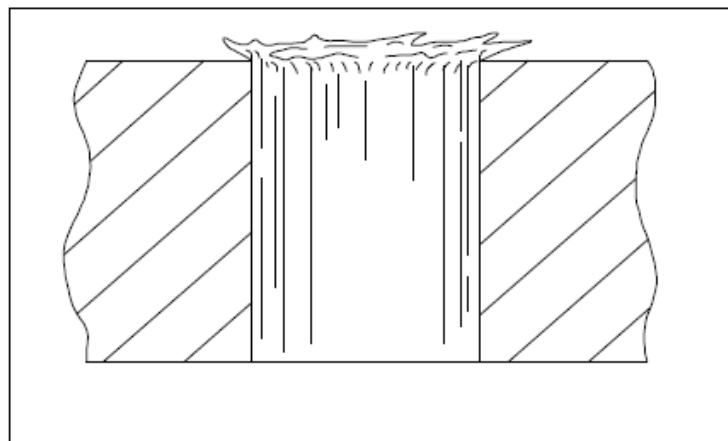
3.1.1.2.3 Doughnut Burr - a loose piece of rolled material that tends to flatten and blend itself into the adjacent material. See Figure 3 for pictorial example.

Figure 3



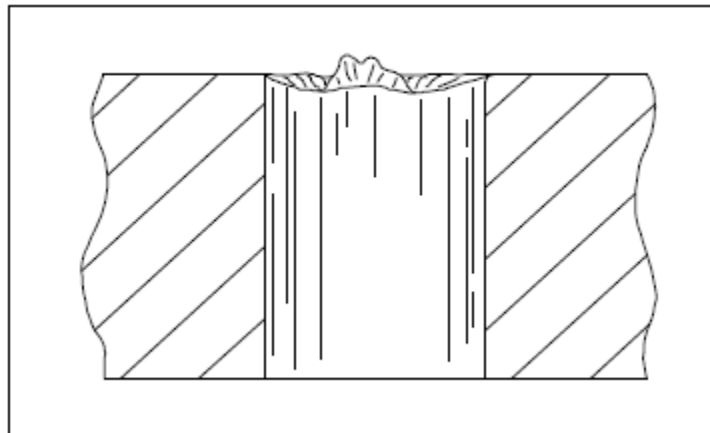
- 3.1.1.2.4 **Sliver Burr** - loose sliver of material attached to the edge of a feature. This type of burr generally forms on edges adjacent to a milled or turned surface. See Figure 4 for pictorial example.

Figure 4



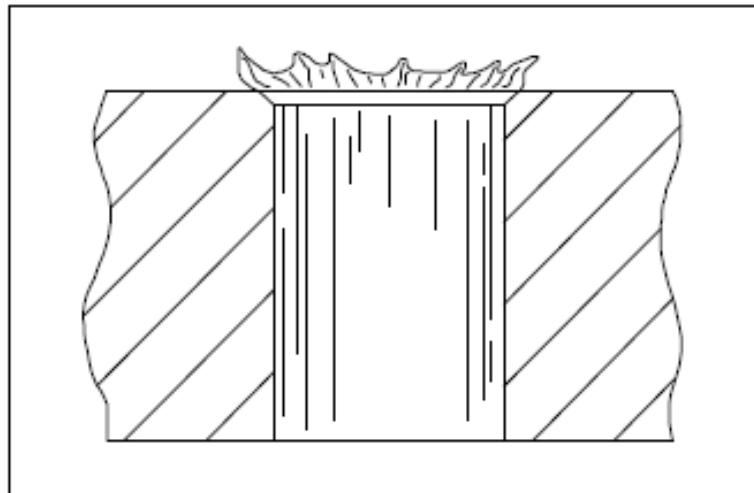
- 3.1.1.2.5 **Hinged Burr**- loose material typically formed in holes and features located on surfaces that have been milled. See Figure 5 for pictorial example.

Figure 5



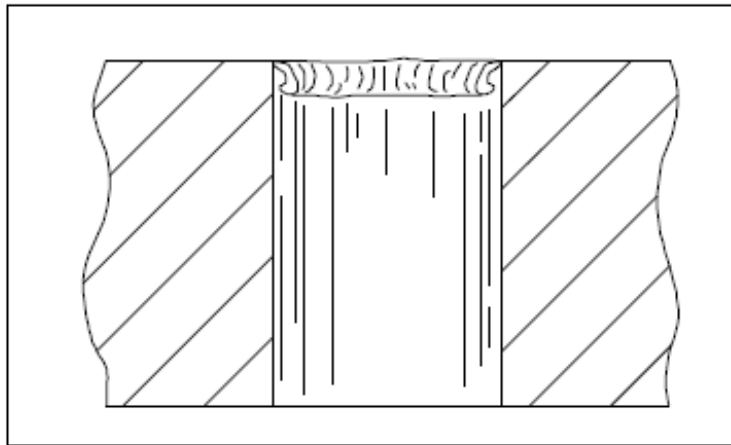
- 3.1.1.2.6 **Crowned Burr**- loosely attached material typically formed around a hole that has been countersunk. See Figure 6 for pictorial example.

Figure 6



- 3.1.1.2.7 **Rolled Burr**- Similar to a hinged burr, this type of burr forms in holes and features that are located on surfaces that have been milled or turned. See Figure 7 for pictorial example.

Figure 7

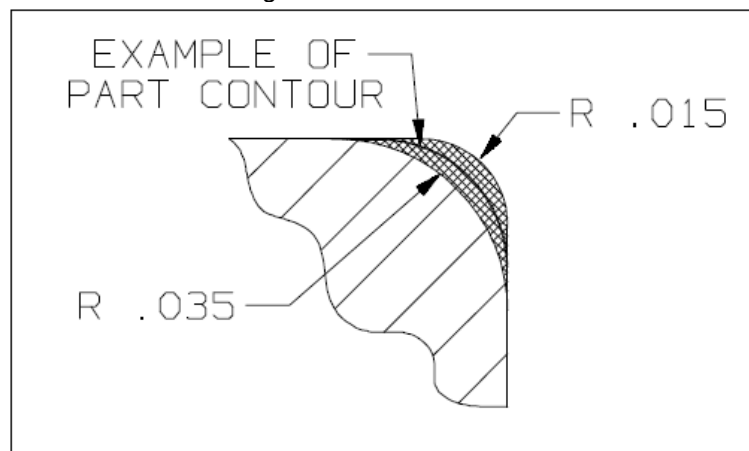


3.1.1.3 Chamfer – a machined inclined surface cut at an edge.

3.1.1.4 Corner – the intersection of three or more edges.

3.1.1.5 CR .XXX (Controlled radius) - Any size radius that falls between the smallest and the largest radius allowed by the stated tolerance. Note: the part contour must be a fair curve with no reversals. Additionally, radii taken at all points on the part contour shall neither be smaller than the specified minimum limit nor larger than the maximum limit.

3.1.1.5.1 Example: CR .025± .010 - A fair curve with no reversals that lies within the shaded region shown



below:

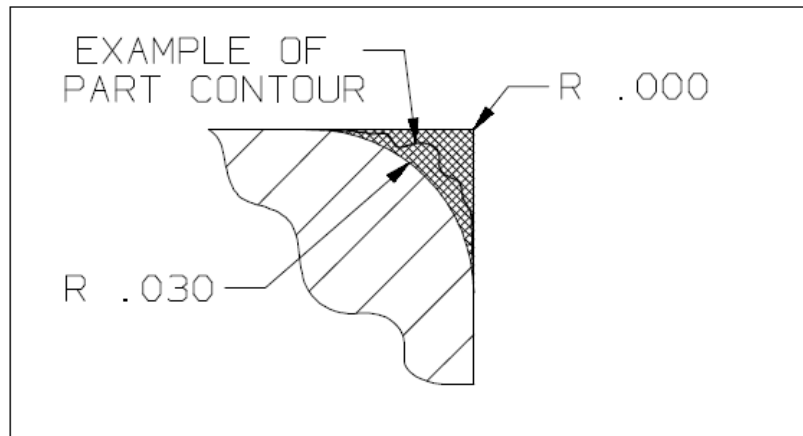
3.1.1.6 *C/R (Chamfer/Radius) - Any combination of angles or radii that fall inside an area formed by the largest chamfer and the smallest radius as allowed by the stated tolerance.*

3.1.1.7 *Edge – the intersection of two surfaces.*

3.1.1.8 *Edge Break – the amount of material removed the theoretical intersection of two surfaces. An edge break is typically identified as a uniform chamfer or radius.*

3.1.1.9 *R.XXX Max. - any combination of angles and radii that fall between a .000" radius and the specified maximum radius.*

3.1.1.9.1 *Example: R .030 Max- Any combination of angles and radii that fall within the shaded area illustrated below:*



3.1.1.10 *R.XXX ±.xxx. - Any combination of angles and radii that fall between the smallest and largest radius allowed by the stated tolerance.*

3.1.1.11 *Secondary Burr - Often after a primary de-burring operation such as countersinking or chamfering, a small burr will be generated at the intersection of the countersink or chamfer surfaces and the original part surfaces.*

3.1.1.12 *Sharp Edges – edges that can readily cut or tear. To clearly illustrate what is meant, the following three classes of sharp edges are defined:*

- Class 1: for thin materials (.010" thick or less), a burr-free edge with a radius, chamfer, or edge break less than $t/10$, where t is the material thickness.
- Class 2: for materials (greater than .010" thick), a burr-free edge with a radius, chamfer, or edge break less or equal to 0.001".

- Class 3: for normal commercial use, any edge that would cut hands, containers, or nearby components in normal handling. Sharp edges in this class include burr-laden edges as well as burr free edges that can cut.

3.2 Burr / Edge Requirements

- 3.2.1.1 *All burrs including feathered, doughnut, sliver, hinged, crowned, and rolled burrs shall be removed to a C/R .015" max unless otherwise specified on the engineering drawing.*
- 3.2.1.2 *Any external sharp edges will be removed to a C/R .015" max unless otherwise specified on the engineering drawing.*
- 3.2.1.3 *All print tolerances and finish requirements must be maintained **AFTER** de-burring is completed.*

4 ENGINEERING

- 4.1.1.1 *Drawings will conform to the requirements set forth by this specification.*
- 4.1.1.2 *Parts will be de-burred to conform to the requirements set forth in this specification.*
- 4.1.1.3 *Parts will be accepted / rejected based on the requirements set forth in this specification.*
- 4.1.1.4 *In areas where further machining, at a subsequent part number (next level), will remove any burrs that may be generated, a note stating "BURRS ALLOWED IN THIS AREA" will be added to the drawing. This area will be outlined with phantom lines to control its boundaries.*
- 4.1.1.5 *If the default inspection classes as stated in SECTION 5 are not acceptable the engineering drawing shall also state the acceptable class of inspection.*
- 4.1.1.6 *In the case of aluminum parts requiring anodized finishes, the engineering drawing shall call-out specific area(s) where anodize rack contact will be permissible. Within these specified areas, craters, scratches, and indentations will be acceptable so long as all deformed material appears plastically deformed (extruded burr), cannot be dislodged with an air blast or nylon bristle brush and the feature's dimensional characteristics meet the engineering drawing.*

5 INSPECTION

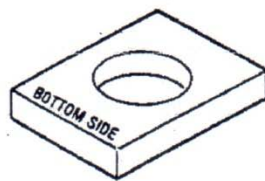
5.1 Inspection Classes

- 5.1.1.1 *Parts for use in oxygen and external to assembly (Class I) - Inspect part with the naked eye.*
- 5.1.1.2 *Parts for use in oxygen and internal to assembly (Class II) - Inspect part using 8X magnification.*
- 5.1.1.3 *Parts for use in non-oxygen products – (Class I) - Inspect part with the naked eye.*

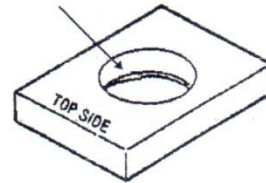
- Note: If, for either of the Classes I or II above, a defect is visible but not identifiable, then an increase in magnification to the next higher magnification is permissible.*

Direction of Viewing

Frequently, easily detectable burrs may be overlooked when viewing a part from an single direction. It is good practice to view components from varying directions and angles when inspecting for burrs. In general, parts should not be viewed looking straight down but should be viewed with the line of sight between 30° to 60° to the edge or surface being inspected.



Burr may not be visible when viewed from one side only.



Burr may be apparent when viewed from one side only.

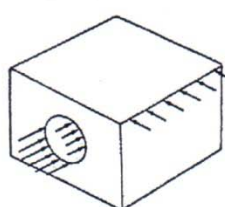


Varying the viewing angle aids in detecting burrs.

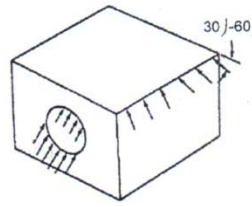
Importance of Direction of View

Proper Lighting

Accurate visual interpretation of burrs requires proper and sufficient lighting. Similar to the line-of-sight viewing of workpieces, lighting should also be at an angle of 30° to 60° to the surface being inspected. Intensity, type, color and angle of lighting used, shall be mainly dictated by the size, shape, material and detail of the workpiece.



Poor Lighting Angles



Preferred Lighting Angles

Lighting Angles

5.2 Surface Texture

- 5.2.1.1 *Surface roughness, waviness, and lay characteristics shall conform to ANSI/ASME B46.1. Components and assemblies must comply with the finish requirements specified on the engineering drawing.*
- 5.2.1.2 *Engineering drawing practices will comply with ANSI/ASME Y14.36M-1996 which establishes the method to designate symbolic controls for surface texture. Drawings will specify a default surface texture value (located in the drawing title block) and also any further refinement of the surface texture must be specified on the field of the drawing (noting critical sealing regions, lay symbols, etc.).*

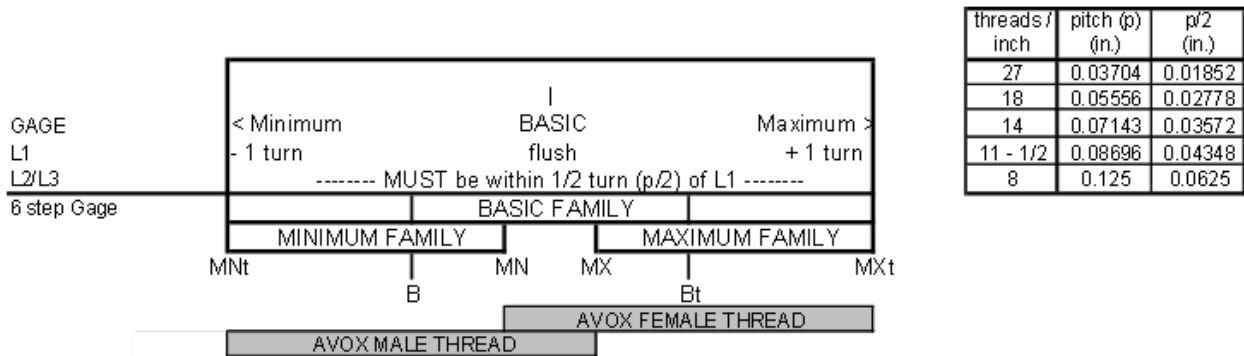
5.3 Threads

- 5.3.1 All threads not specified to the UN standard to be a Class 2A for external and Class 2B for internal threads.
- 5.3.2 All thread relief angles to be $45^\circ \pm 5^\circ$ unless otherwise specified on drawing.
- 5.3.3 Threaded Fasteners (including male threaded components/features):
 - 5.3.3.1 *The threaded portion of fasteners must gage correctly with regards to pitch, major and minor diameter (i.e. go/no gage, referee gaging 3-wire method). Loose hanging burrs as defined by being able to be blown off with compressed air or removed with a brush are unacceptable.*
 - 5.3.3.2 *The head area of fasteners must gage correctly with reference to size. Loose hanging burrs, as defined by being able to be blown off with compressed air or removed with nylon brush are unacceptable.*
- 5.3.4 Blind tapped holes will be acceptable with sheared burrs or rolled cusps generated from the tapping operation at the crest or minor diameter of the thread so long as this material is firmly enough attached so that a compressed airblast from a nozzle small enough to enter the blind hole to its bottom will not dislodge this material. Likewise, a slight raised appearance where the first thread intersects the countersink at the entrance to the hole will be acceptable if it cannot be dislodged by air-blast or contact with a nylon bristle brush. In all cases the tapped hole must gage properly with the appropriate plug gages. Form or roll tapping is an acceptable practice for any internally threaded feature. This same criteria will apply to through tapped holes; any additional controls desired on through tapped holes will appear on the engineering drawing.

5.3.5 ANPT Threads:

5.3.5.1 *Pipe Threads, Taper, Aeronautical National Form, ANPT: are to meet the requirements of SAE AS 71051B, with the following modification, unless the drawing specifies otherwise.*

- *The thread family class will be as follows:*
 - o *External (Male) threads – Basic family to minimum family.*
 - o *Internal (Female) threads – Basic family to maximum family.*



5.4 Drilled Holes

5.4.1 If noted on an AVOX engineering drawing, a feature of size (circular) specifies: Drill (example: *Drill .096" thru*). The drilled hole tolerances unless otherwise specified on the blueprint are per EO 1000-180:

Drill Size	Tolerance
0.0135" thru 0.125"	+0.004" / -0.001"
0.126" thru 0.250"	+0.005" / -0.001"
0.251" thru 0.500"	+0.006" / -0.001"
0.501" thru 0.750"	+0.008" / -0.001"
0.751" thru 1.000"	+0.010" / -0.001"
1.001" thru 2.000"	+0.012" / -0.001"

6 CYLINDERS

6.1 Steel Cylinders

- 6.1.1 DOT Ratings: 3AA-1800, 3AA-2100, or 3HT-1850
- 6.1.2 Inspection Criteria: CGA C-6-2005, Standards for Visual Inspection of Steel Compressed Gas Cylinders, Compressed Gas Association.

6.2 Composite Cylinders

- 6.2.1 DOT Ratings: DOT-E8162-1850, TC-SU 4237-127, or DOT-E8391-1850
- 6.2.2 Inspection Criteria: CGA C-6.2, Guidelines for Visual Inspection and Requalification of Fiber Reinforced High Pressure Cylinders, Compressed Gas Association.
- 6.2.3 Note: Variations in shape of cylinder bases – Composite cylinders are manufactured by fiber reinforcement of a metal liner. The fiber reinforcement is built up by filament winding and as such the shape of the cylinder base can vary depending on the winding pattern or design characteristics. Figure 8 shows examples of the typical variation that is possible. The cylinder on the left has not been deformed by pressure but is exhibiting a more pointed shape due to the winding process.

Figure 8: Variations in Shape Of Composite Cylinder Bases



Source: Luxfer Carbon Composite Cylinders "INSPECTION MANUAL 2009".

7 RUBBER and PLASTIC MOLDED COMPONENTS

7.1 Rubber Parts

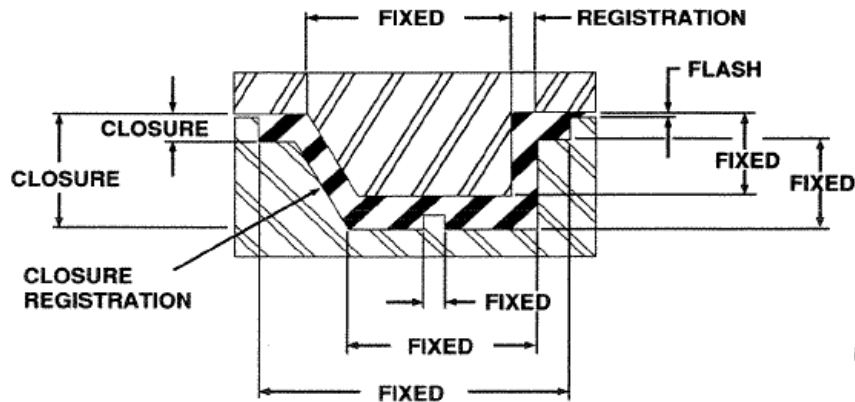
- 7.1.1 Reference RMA MO-1 (2005) and AVOX SMP 7600001.

7.1.2 Dimension Terminology

7.1.2.1 *The following will provide a common terminology for use in discussing dimensions of molded rubber products, and for distinguishing various tolerance groupings:*

7.1.2.1.1 *Fixed Dimension: Dimensions not affected by flash thickness variation. (Mold Closure)*

7.1.2.1.2 *Closure Dimensions: Dimensions affected by flash thickness variation. (Mold Closure)*



7.1.2.2 *"A3" - tolerances indicate a "commercial" product and will be used for all molded rubber products, and for distinguishing various tolerance groupings unless specified differently on the engineering drawing.*

7.1.3 Machined Finish of Mold

7.1.3.1 *"F3" is "Commercial Finish. Surfaces of the mold will conform to good machine shop practice and no micro-inch finish will be specified. This will be the default unless specified differently on the engineering drawing.*

7.1.4 Flash

7.1.4.1 *Flash is excess rubber on a molded product. It results from cavity overflow and is common to most molding operations. Flash has two dimensions - Extension and Thickness.*

7.1.4.2 *Flash Extension - is the film of rubber projecting from the part along the parting line of the mold. Flash Thickness - is measured perpendicular to the mold parting line. Variations in flash thickness are normally included in closure tolerances*

7.1.4.3 *The designer may indicate on his drawing any amount of maximum flash extension permissible. Reference RMA MO-1 for designation specifics.*

7.2 O-Rings

7.2.1 **Dimensional Specifications:** Aerospace Standard (AS) 568 “Aerospace Size Standard for O-rings” contains specifications for inner diameter and cross-section diameter, as well as parting line height and projection.

7.2.2 **Surface Quality/Inspections Specifications:** Military Standard MIL STD 413 C is the standard for O-rings standard imperfection classifications.

7.2.2.1 *Includes illustrations and supplementary definitions and dimensions to identify O-ring surface imperfections for “the purpose of inspection, and*

7.2.2.2 *Establishes quantitative levels of acceptance for O-rings relative to surface imperfections, type, size, and quantity.*

7.3 Plastic Molded Components

7.3.1 Verify that parts being inspected are from the same material and molding lot. Material certification shall be supplied by supplier/molder.

7.3.2 Inspect parts to the requirements of the drawing and the inspection characteristics sheets.

7.3.3 Carefully inspect component for signs of crazing and cracking.

7.3.4 The presence of existing cracks and/or material de-laminations shall be cause for rejection.

7.3.5 Molding knit lines and/or material flow lines shall not be a cause for rejection unless they result in a discontinuity in a critical area or degrade the structural integrity of the part.

7.3.6 Engineering drawings should specify surface finish using Society of the Plastics Industry (SPI) standard surface finish definitions.

S.P.I. Mold Finishes	Roughness Average (R.A.)		Root Means Square (R.M.S.)	
	Micrometers (µm)	Microinches (µin)	Micrometers (µm)	Microinches (µin)
A-1	0.012	0.5	0.013	0.5
	0.025	1.0	0.027	1.1
A-2	0.05	2.0	0.055	2.2
A-3/ B-1	0.10	4.0	0.11	4.4
	0.15	6.0	0.18	7.2
B-2	0.20	8.0	0.22	8.8
	0.25	10.00	0.27	10.8
B-3	0.3	12.0	0.33	13.2

Figure 9: SPI Mold Finish & Corresponding Surface Roughness

8 External Drawing Specifications/Standards

8.1.1 When the Engineering Drawing contains a specification, standard or other reference number which is superseded, cancelled, obsolete, or discontinued:

8.1.1.1 Supersession Information – when the specification/standard cancellation notice lists a specific replacement document utilize the equivalent replacement specification. This paper trail facilitates the procurement of material or other products to the appropriate follow-on standard.

8.1.1.2 Cancelled Information – when a specification has been declared “CANCELLED” or “OBSOLETE” and has been superseded, the requirements of the latest issue of the replacement specification is accepted.

8.1.1.3 Discontinued – when the specification has been discontinued or cancelled without replacement, contact AVOX Engineering or Supplier Quality for the appropriate specification or standard to utilize.

9 Cleanliness and Packaging

- 9.1.1 Prior to stocking and/or prior to returning parts to AVOX Systems, all parts are to be free of process related material (i.e. chips, coolant, bead blast material, deburring media, etc).
- 9.1.2 Packaging codes are specified on the Purchase order after the QA requirement codes (e.g. VS/A). All parts and/or assemblies shall be packaged in accordance with all applicable drawings, specifications and special packaging instructions. If specific packaging instructions are not imposed, the best commercial packaging practices must be used to prevent damage. Packaging codes are specified on the Purchase Order after the QA requirement codes (e.g. VS/A ; note : “VS” is for AVOX internal use only)
- Code A – If Code A is specified on the PO, parts must be individually packaged.
 - Code B – If Code B is specified, the items have shelf life limitations (Refer to document SQAR S_0002W_QA).
 - Code C – If Code C is specified, the items may be packaged in bulk.

10 Textiles

10.1.1 EEBD material

10.1.1.1 Class “A” and Class “B” variances

10.1.1.1.1 Consists of yarn discolorations in the fabric weave termed “floats”, “bunched”, or “slubs” conditions. Such conditions may appear singly, or in combination with each other.

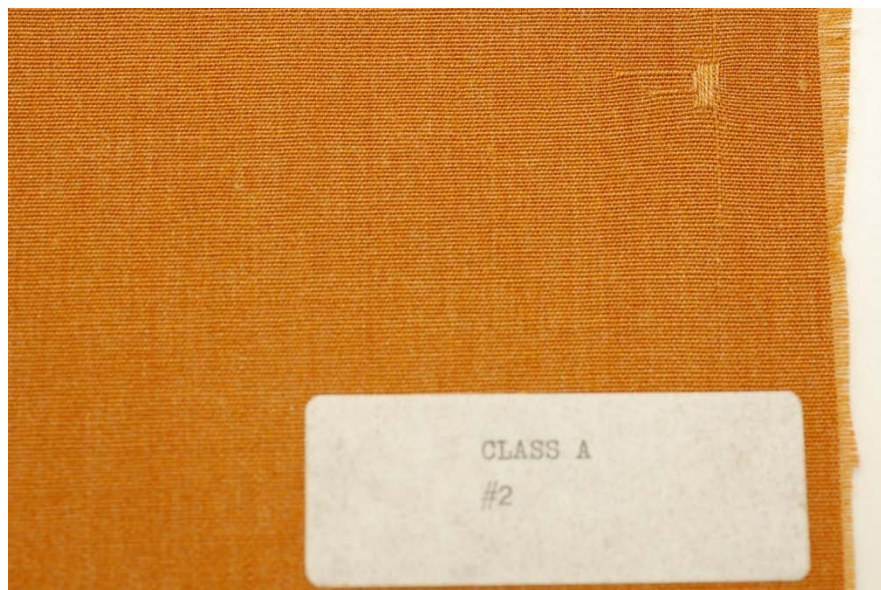
10.1.1.1.2 The weaving process occasionally produces a fabric construction containing “Floats, whereas several yarns may extend over and under several filling yarns in a misweave, yet continue to provide flash protection.

10.1.1.1.3 Samples shown are typical of these conditions and are acceptable within prescribed allowances.



Class A, #1 Floats (Acceptable as shown)

1. Acceptable if less than ½ square inch in area per occurrence
2. Acceptable if no more than 2 per side above apron – total 4 per hood
3. Acceptable if no more than 1 per side on apron – total of 2 per hood
4. NOTE: In all cases (floats) must be relatively tight to assure functional integrity



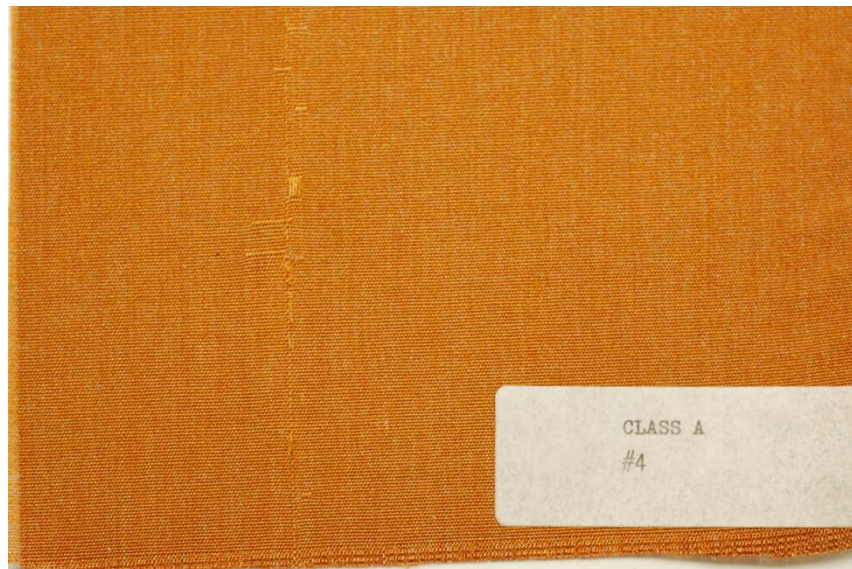
Class A, #2 Floats (Acceptable as shown)

1. Acceptable if less than ½ square inch in area per occurrence
2. Acceptable if no more than 2 per side above apron – total 4 per hood
3. Acceptable if no more than 1 per side on apron – total of 2 per hood
4. NOTE: In all cases (floats) must be relatively tight to assure functional integrity



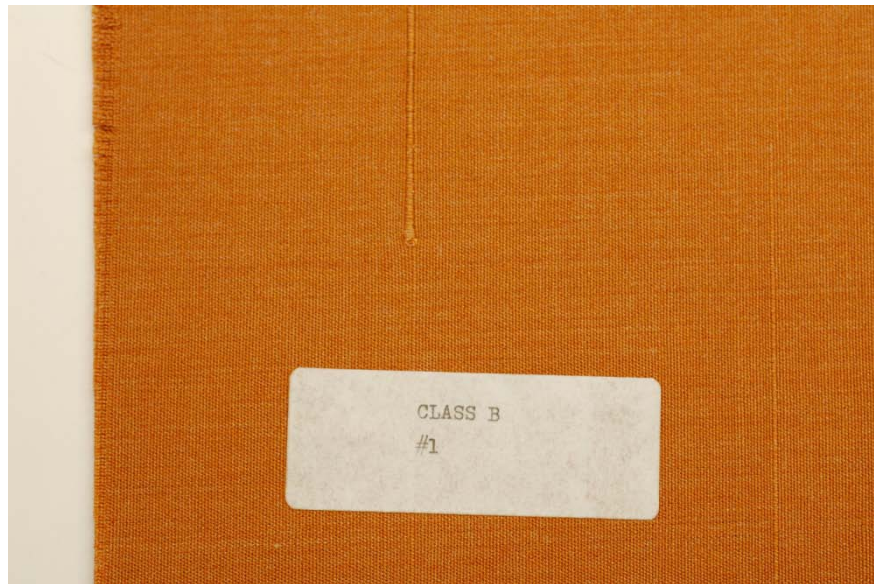
Class A, #3, Floats, bunched or slubs combinations (acceptable as shown)

1. Acceptable if meeting criteria of A1 and A2
2. Acceptable if meeting criteria of B1 and B2



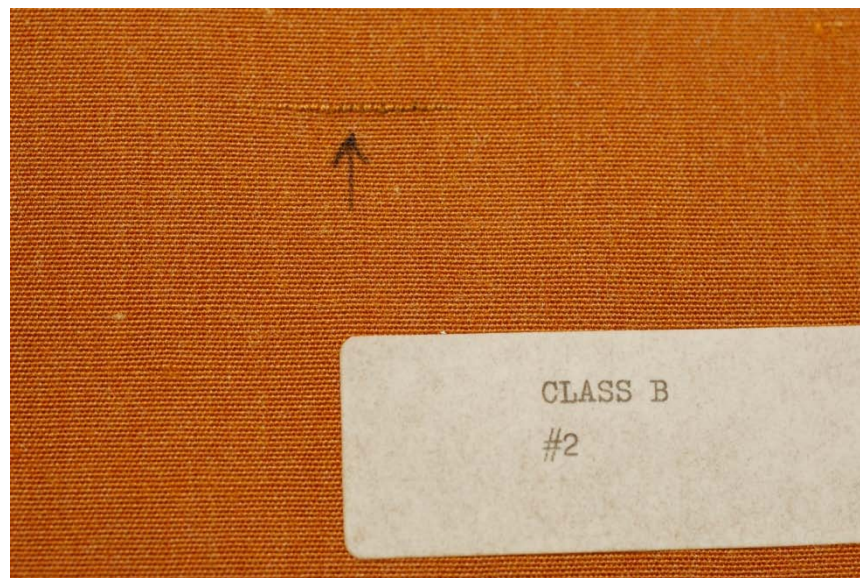
Class A, #4, Floats, bunched or slubs combinations (acceptable as shown)

1. Acceptable if meeting criteria of A1 and A2
2. Acceptable if meeting criteria of B1 and B2



Class B, #1 Bunched, Slub, Broken(acceptable as shown)

1. Acceptable if length is less than 6 inches and width is less than $1/16^{\text{th}}$ of an inch.
Maximum allowed – 2 per side – total of 4 per hood



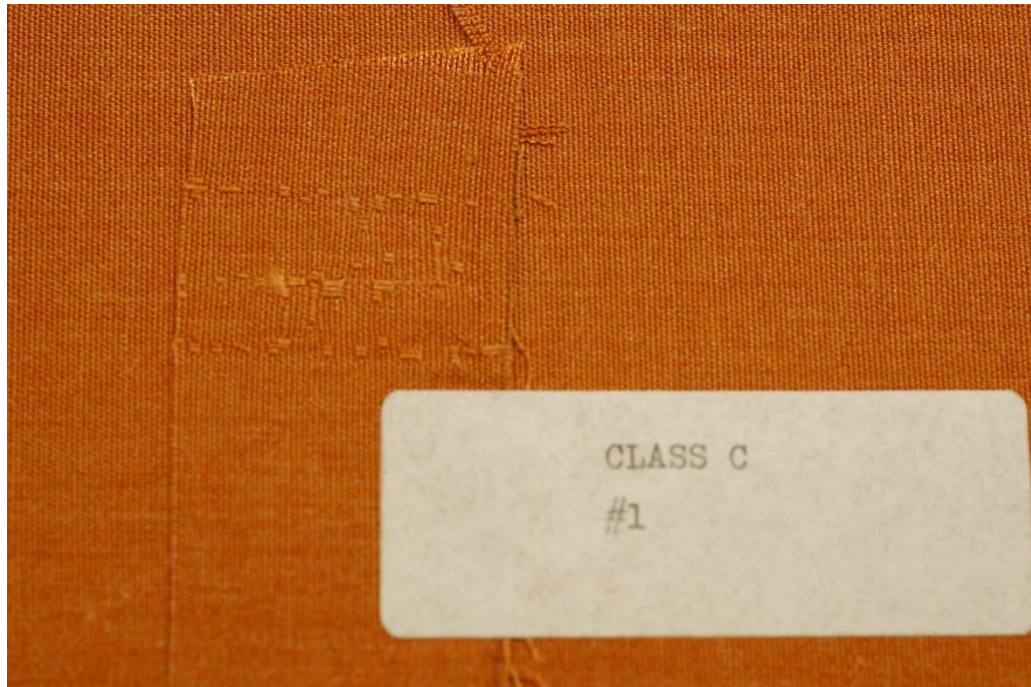
Class B, #2 Bunched, Slub, Broken(acceptable as shown)

2. Acceptable if length is less than 4 inches and width is less than $1/8^{\text{th}}$ of an inch.
Maximum allowed – 1 per side – total of 2 per hood

10.1.1.2 Class "C" variances

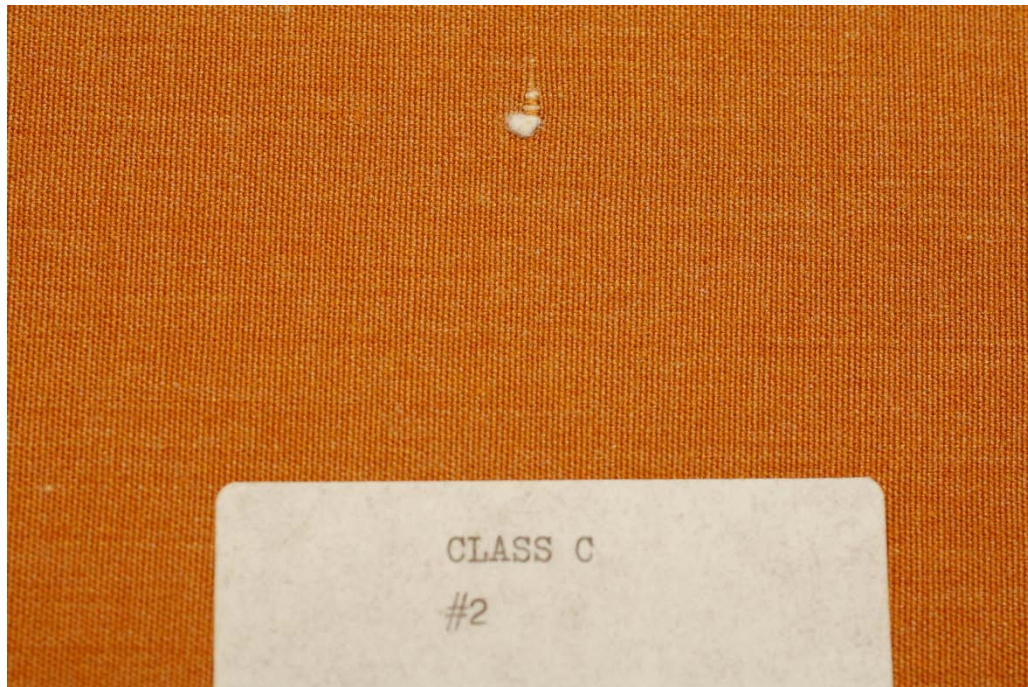
10.1.1.2.1 Consists of yarn breaks, interruptions and ruptures in the fabric which are superficial and do not affect structural integrity of the fabric construction.

10.1.1.2.2 Samples shown are typical of these conditions and are acceptable within prescribed allowances



Class C, #1 Broken P/C (acceptable as shown)

1. Acceptable if not exceeding 4 square inches per occurrence. Maximum allowed – 1 per side above apron. Total of 2 per hood. Maximum allowed – 1 per side on apron. Total of 2 per hood.



Class C, #2 Fuzz Ball (Acceptable as shown)

1. Acceptable if not exceeding 5 per hood

10.1.1.3 Class "D" variances

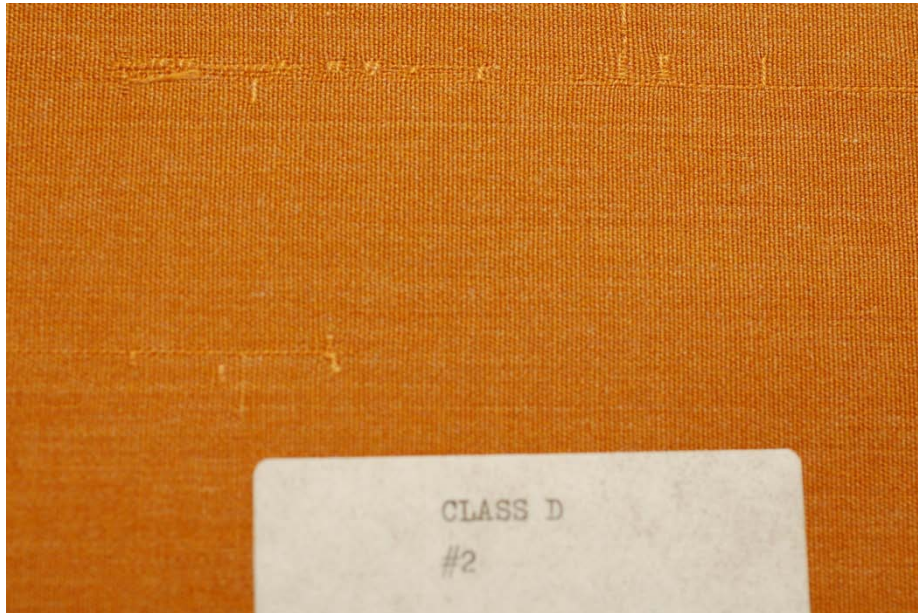
10.1.1.3.1 Consists of irregularities and locally loose construction involving a few yarns and are known as floats and loops

10.1.1.3.2 Samples shown are typical of these conditions and are acceptable within prescribed allowances.



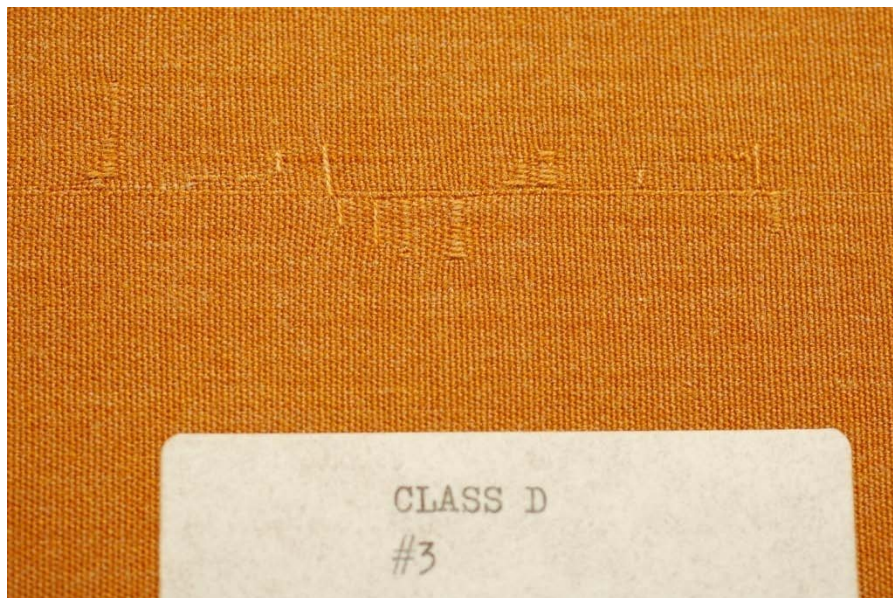
Class D, #1 Floats and loops (acceptable as shown)

1. Acceptable if not exceeding 4 inches in length or 2 square inches per occurrence.
Maximum – 1 per side. Total of 2 per hood



Class D, #2 Floats and loops (acceptable as shown)

1. Acceptable if not exceeding 4 inches in length or 4 square inches per occurrence.
Maximum – 1 per side. Total of 2 per hood



Class D, #3 Floats and loops (acceptable as shown)

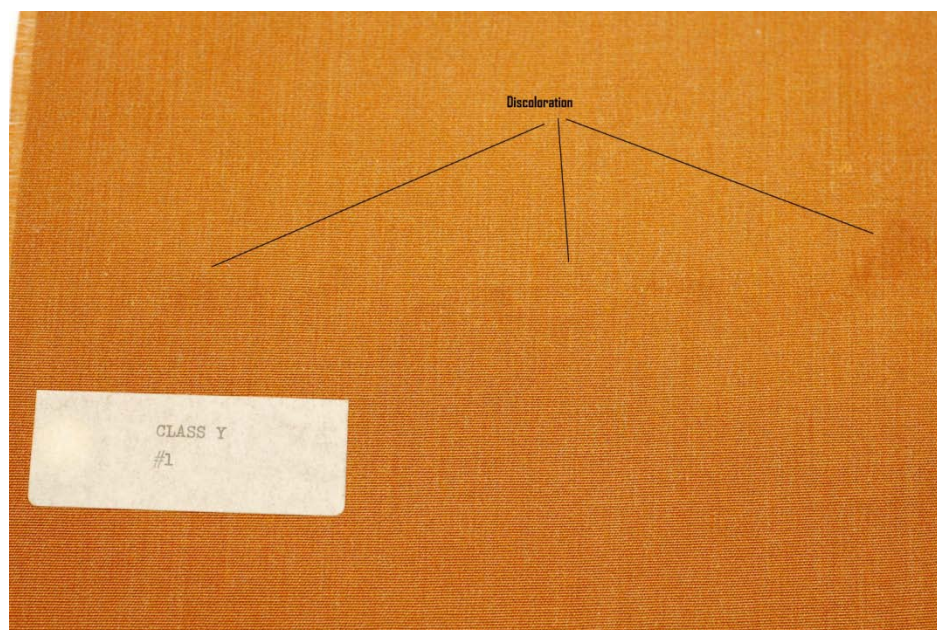
1. Acceptable if not exceeding 4 inches in length or 4 square inches per occurrence.
Maximum – 1 per side. Total of 2 per hood

10.1.1.4 Class "Y" variances

10.1.1.4.1 Consists of sudden color or hue changes on fabric, identification markings or change in fabric color contrast due to adhesives or residues from contact tape.

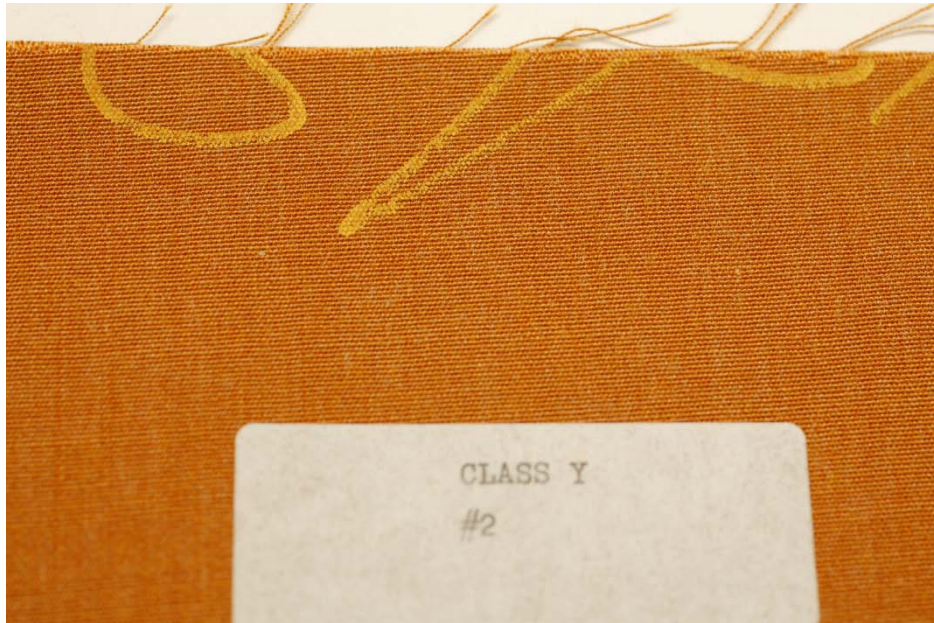
10.1.1.4.2 Samples shown are representative of non-acceptable variances. Hoods exhibiting one or more of these conditions are to be rejected

NOTE: Condition Y #1 may be acceptable if no worse than the sample in the master material sample book



Class Y, #1 Stains (acceptable as shown)

1. Not Acceptable Tone or hue change is more subtle than shown in photograph. Photo may have been enhanced for contrast.



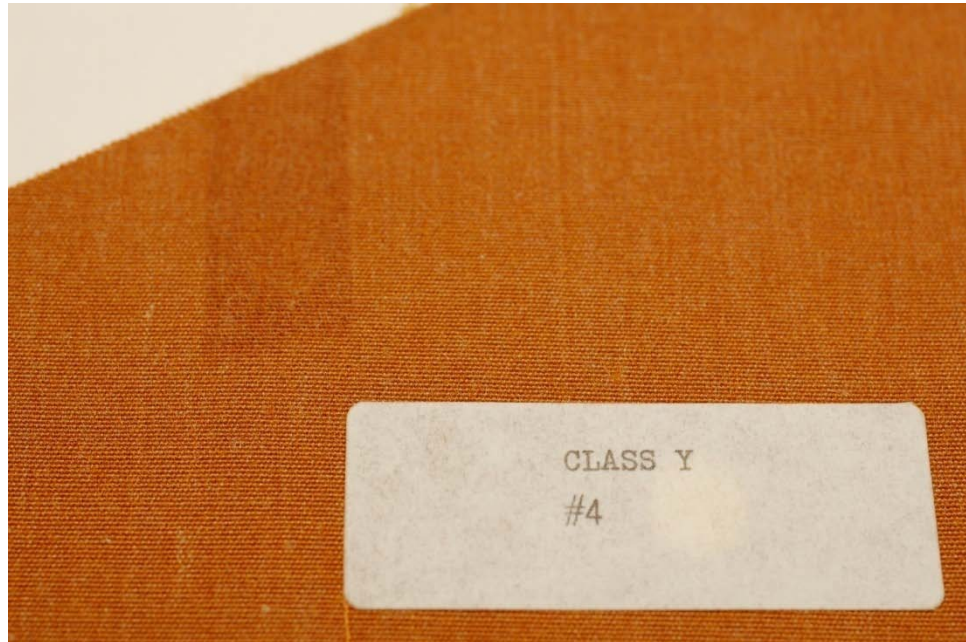
Class Y, #2 Markings (acceptable as shown)

1. Not Acceptable



Class Y, #3 Stamping

1. Not Acceptable



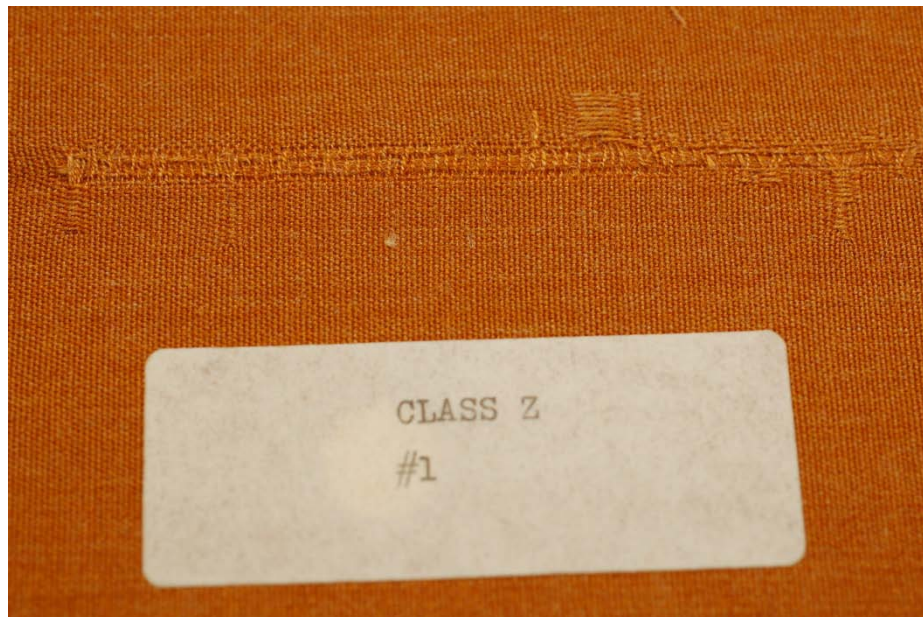
Class Y, #3 Tape Mark

1. Not Acceptable

10.1.1.5 *Class "Z" variances*

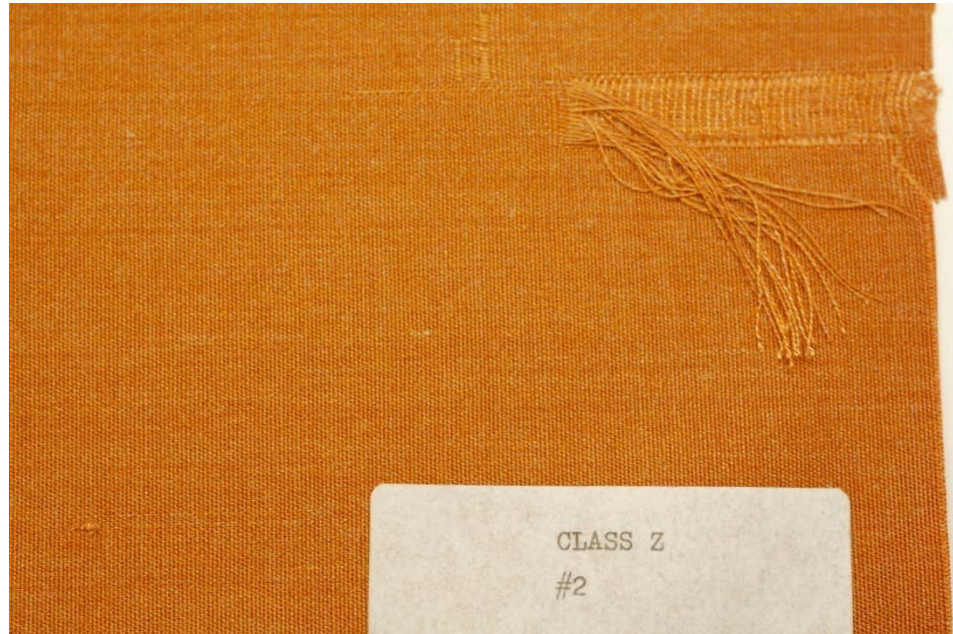
10.1.1.5.1 Consists of extensive yarn discolorations which compromise structural integrity of the fabric.

10.1.1.5.2 Samples shown are not acceptable



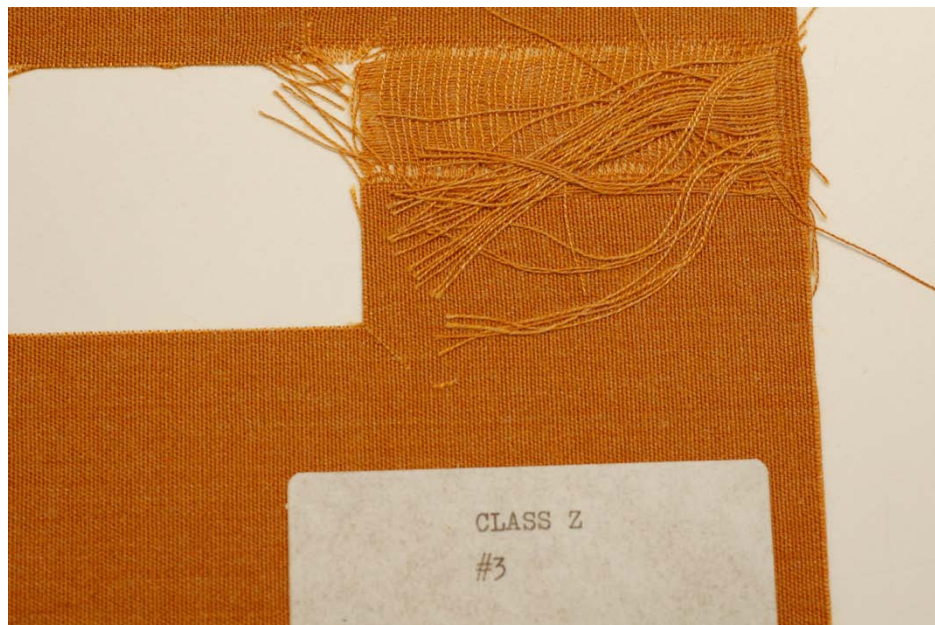
Class Z, #1 Extensive Dislocation

1. Not Acceptable



Class Z, #2 Extensive Dislocation

1. Not Acceptable



Class Z, #3 Extensive Dislocation

1. Not Acceptable



Class Z, #4 Extensive Dislocation

1. Not Acceptable

10.1.2 JSAM Duck cloth (Bags, pouches, pockets) and general standards

10.1.2.1 Seam Edges – All the seam edges shall be specified distance from edge of fabric (as called out on part drawing). Seams shall not be twisted or pleated, and no parts shall be caught in an unrelated operation or seam

10.1.2.2 Thread breaks and ends of seams – All thread ends shall be trimmed to a maximum of ¼ inch.

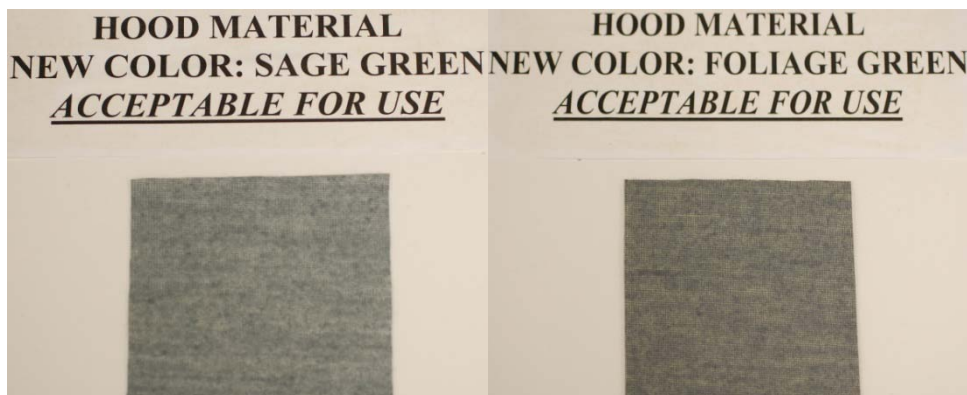
10.1.2.3 Sewing – Each row of stitching shall be straight and parallel to the seam edge. Thread breaks, skips, and run-offs shall be over stitched not less than 1 inch. The thread tension shall be maintained to prevent loose or overly tight stitching.

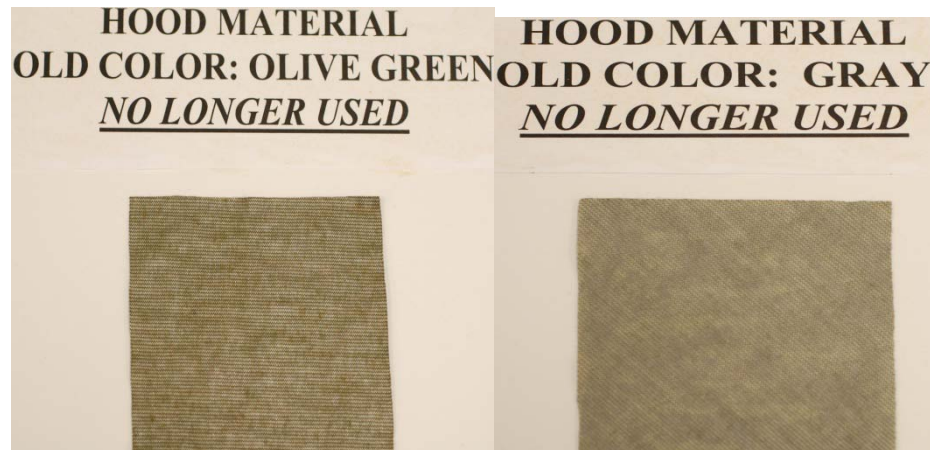
10.1.2.4 Repairs – Repairs to type 301 stitching are allowed. Loose or excessively tight stitching shall be repaired by removing the defective stitching without damaging the materials and restitching as required in the applicable drawing. Needle holes resulting from removed stitching do not constitute damage to the material.

10.1.2.5 Markings – All item markings shall be in accordance with the applicable drawing requirements. There shall be no smears or smudging on the label on the label that causes the identification to not be easily legible with the unaided examination by untrained personnel.

10.1.3 JSAM Nomex (MPU-6 hood material)

10.1.3.1 Color JSAM Nomex material





10.1.3.2 Seams All the seam edges shall be specified distance from edge of fabric (as called out on part drawing). Seams shall not be twisted or pleated, and no parts shall be caught in an unrelated operation or seam

10.1.3.3 Seam taping / sealing: Tape edges peeling are not acceptable



10.1.3.3.1 Pleats, puckers: NO pleats or puckers allowed in the seam sealing tape

10.1.4 JSAM polyester (MPU-5 hood material)

10.1.4.1 Color: Color to be in accordance with W.L. Gore P/N KPDX605103

10.1.4.2 Seams All the seam edges shall be specified distance from edge of fabric (as called out on part drawing). Seams shall not be twisted or pleated, and no parts shall be caught in an unrelated operation or seam

10.1.4.3 Seam taping / sealing: Tape edges peeling are not acceptable



10.1.4.3.1 Pleats, puckers NO pleats or puckers allowed in the seam
sealing tape

10.1.4.3.2 Scorched surface: Scorched surfaces on the material or the tape are not acceptable

